Abstract

Charles University in Prague

Faculty of Pharmacy in Hradec Králové

Department of Pharmaceutical Technology

Student: Nikola Mrázková

Supervisor of Diploma thesis: Doc. RNDr. Milan Dittrich CSc.

Title of Diploma thesis: Formulation of nanoparticles with terbinafine

In the theoretical part of this diploma thesis is presented review concerning basic applications of nanotechnology in health service, characteristic of nanoparticles, their dividing and use in pharmacotherapy, especially in targeted drug transport. The focus of the thesis presented here is in experimental part. Particles of submicrom size were fabricated by the using of emusion solvent distribution method in the emulsion of o/w type. Star-like terpolymer of DL-lactic acid and glycolic acid branched on tripentaerytritole as core was used as potential drug carrier. The aim was to prepare the smallest particles as possible. The size and the size distribution were measured by the PCS method by the using of the device Zeta Sizer ZS. The impact of two from the chemical point of view different emulsifiers and two emulsion concentrations on the granulometric parameters of the prepared particles was evaluated. The stability of parameters during storage at lowered temperature and in the frozen state during the one day period after preparation was monitored. The change of the particle size in the dispersion medium in various time intervals until 250 minutes were recorded. Practical knowledges concerning the changes of nanodispersions in short period after their preparation and some possibilities in the lowering of their extent were acquired in this work.